

The influence of walking aids on the recovery of gait function and balance following stroke

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Propositions

Accompanying the thesis

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Clare Maguire

1. To optimally improve balance and gait recovery following stroke, assistive walking devices should be designed in such a way that hands are not used (this thesis)
2. The base-of- support of the patient should not be extended by the walking aid (this thesis)
3. Muscle activity should not be decreased when walking with a device (this thesis).
4. In complex patients the Randomized Controlled Trial (RCT) has outlived it's use (this thesis).
5. Functional improvements in balance and gait in chronic stroke patients can still be achieved when interventions are applied with a high dosage for several hours a day and are functionally relevant for patients.
6. The future development of rehabilitative and physiotherapeutic science should be based upon sound physiological, biomechanical, neuromuscular and neuroscientific knowledge as well as clinical evidence, reflected practice and patient opinion, hence moving away from a traditional pragmatic, expert opinion lead profession.
7. Aspects of motor learning and neuroplasticity which have been the basis for innovations in many new rehabilitation interventions, such as robotics and virtual reality, should be considered more explicitly when testing or developing established, non-technological treatments.
8. The need for effective, affordable interventions for patients following stroke is gaining in importance as the absolute numbers of stroke survivors world-wide continues to increase and the burden of disease is greatest in low and middle income economies.
9. To improve balance and gait recovery following stroke it is better to use a carrot than a stick.
10. "Being a scientist means living on the borderline between your competence and your incompetence. If you always feel competent, you aren't doing your job." Carlos Bustamante (Molecular Biologist, UC-Berkeley)